



Accelerated Bridge Program

JUNE 2010 UPDATE

Executive Summary

The Accelerated Bridge Program celebrated a number of successes this quarter and continued to make steady progress against all goals. As both projects and the Program mature, ABP is generating improvements in the data and tools available to manage results. Project controls are increasingly in place, coordinated traffic management and planning including the use of the new traffic model for Charles River Basin is very active, better data about the jobs being created and sustained is becoming available, excellent results are being achieved in the participation rates by women and minority owned firms and public outreach approaches are becoming more robust. Innovative approaches, such as the use of “heavy-lift” accelerated construction techniques that were once ideas on paper are now projects in construction. Program risks continue to be closely watched. Many designs hinge on the timely delivery of successful permitting and utility work by third parties, and complex projects with many stakeholders with competing interests require active public collaboration to ensure the needs of all users are incorporated into the Program. Through active project management these issues are being effectively and thoughtfully addressed. The information in this report is current to May 3, 2010, unless otherwise specified.



View of old pipe culvert bridge over
Shaker Mill Brook, Oct-2007



View of new, wildlife-friendly bridge & stream
restoration at Shaker Mill Brook, May-2010

ABP projects are being noticed for their efficiency. The ABP was presented with the 2010 Construction Management Project Achievement Award from the New England Chapter of the Construction Management Association of America for the Pleasant Street Bridge in Grafton, MA. All three of the projects that reached substantial completion this quarter were completed on or ahead of schedule and within budget. The Shaker Mill Brook Bridge in Becket, MA has reopened restoring pedestrian and vehicular traffic after a long closure due to the deterioration of the bridge. This project also greatly improved the habitat for the area fish, turtles and other wildlife by replacing an old corrugated steel pipe culvert with a prefabricated concrete bridge and restoring the banks of the brook. It was completed eight months ahead of its contractual completion date. Successful traffic planning on the B.U. Bridge helped ensure a hassle-free opening day for Red Sox fans on Easter Sunday, and traffic management at the Neponset Bridge in Quincy has so far exceeded all expectations.

The projects continue to advance from scoping, through design, procurement, and construction to substantial completion. This quarter of the 199 projects currently in the program (the Morton St. demolition project added last quarter was consolidated back into the full bridge project), 14 are being scoped, 100 are in design, 16 are in procurement, 52 are in construction and 17 are substantially complete. 11 projects were advertised this quarter with an estimated construction value of \$40.2 million bringing the total to 85 projects valued at \$522.3M. Advertising dates are continuously reviewed with the aim of meeting program goals. Currently projections show that 56 projects will advertise this year down from last quarter's projection of 60, but 7 projects are under review to be expedited. Significant progress is reported this quarter on the scoping of the former DCR projects that has resulted in more comprehensive repair plans. These revised scopes will impact both budget and schedule but will deliver enhanced solutions. The Longfellow Bridge Early Action contract has advanced to construction, with the contract amount significantly below budget. The other mega-projects, each complex in its own way are also progressing with results from the Fall River task force expected this summer. Both budget and schedule are issues to watch on the Fall River project. This quarter the construction budget was increased from \$125 M to \$180 M to better anticipate the options under consideration. The ABP is also pursuing designs on potential contingency projects to serve as replacement projects in the event a significant project is dropped from the program.

The ABP laboratory for innovation continues. Thanks to innovative procurement and streamlined bid processing, the ABP has awarded its first “heavy-lift” project in Phillipston. It is due to be completed by November 1, 2010. The project, which has been awarded using the design-build delivery method and an incentive-based contract will be designed and constructed in less than a year. The project will use the accelerated construction technique of a gantry system of track rollers and hydraulic lifts to roll the new bridge into place. This project provides a glimpse into the future of MassDOT projects, where construction disruptions will be kept to a minimum wherever possible. The second such project is slated for Wellesley with a planned award date of August 2010 and construction date of July 2011. Another exciting project involves the Value Engineering Cost Proposal by the contractor A.A. Will on the Broadway Bridge between Hanover and Hanson. By substituting pre-cast elements and reducing the amount of work in water the project will be delivered in three months instead of three years. The project will save time, money and have a reduced impact on the environment. ABP played host to an innovative contracting workshop with its partners the Federal Highway Administration, Construction Industries of Massachusetts and the American Council of Engineering Companies on March 16, 2010. This session helped build support and knowledge among the teams that will be responsible for delivering these new approaches.

Over 3,000 construction jobs have been created or sustained under the ABP and all access and opportunity goals for design and construction are being achieved. For the first quarter since the inception of the ABP, we are able to describe labor participation rates thanks to the full implementation of the Equitable Business Opportunity software. A total of 518 minority construction workers were employed on ABP construction projects and 23 women. M/WBE business participation is currently 16.2% overall, ahead of the 14% goal.

Saving money by completing bridge repairs sooner is a major goal of the ABP. A recent draft report based on a study conducted by Cambridge Systematics on behalf of MassDOT analyzed the ABP and its potential to impact the condition of bridges in the Commonwealth. Preservation investments can dramatically increase the useful life of a bridge. Sufficient small investments made early enough in the bridge’s deterioration can forestall the need for expensive rehabilitations. In summary, by both investing in preservation and performing bridge replacements and rehabilitation projects, the ABP will save \$856 million in construction cost avoidance, and reduce future investment needs by \$3.3 billion. Cambridge Systematics estimates the program will result in 22% fewer structurally deficient bridges.

ABP’s public outreach and engagement is a critical part of each project and the program as a whole. This quarter 15 public meetings were held as well as many individual briefings with legislators, local officials and interest groups. In addition, community meetings were held in each of the five Highway Districts to discuss how bicycles and pedestrians are being planned for in each of the ABP projects. ABP is also partnering with our sister agency, the state office of public collaboration to facilitate a Task Force designed to incorporate the ideas of all stakeholders regarding the Longfellow Bridge and to support MassDOT in its development of a comprehensive public engagement protocol.

In the coming quarter, 16 projects are scheduled for advertising with an estimated construction value of \$56.1 million and eight projects are slated for substantial completion.



Center Pier Concrete Placement
Route 123 over Route 24 in Brockton, Apr-2010

Anne L. Collins
Accelerated Bridge Program

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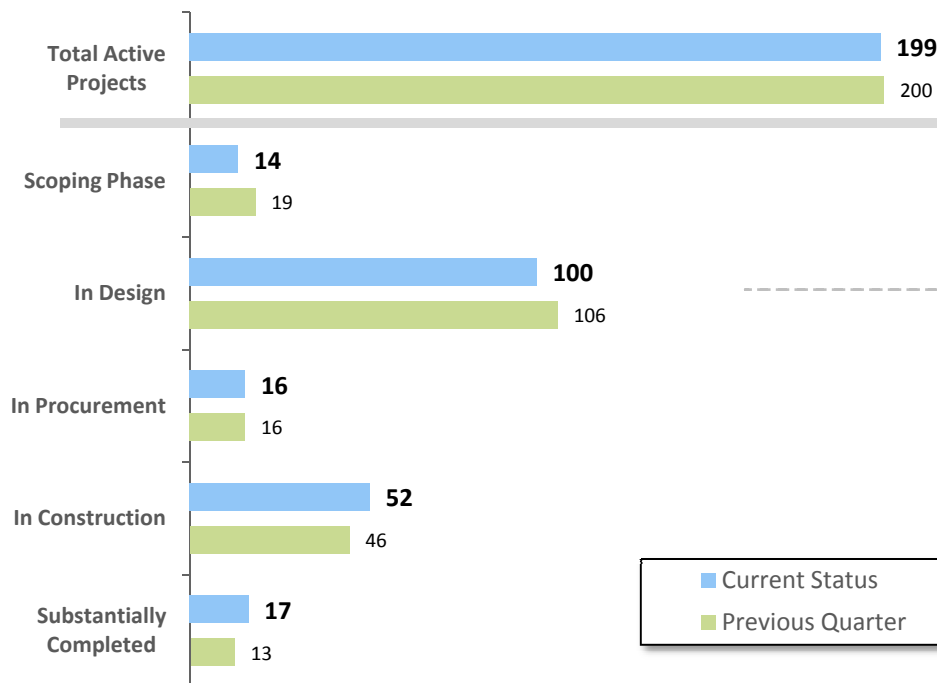
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Program Schedule Status

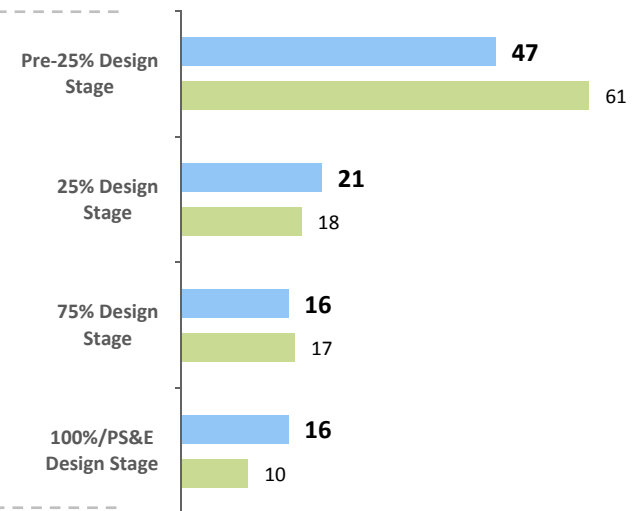
Program Timeline



Active Projects by Phase



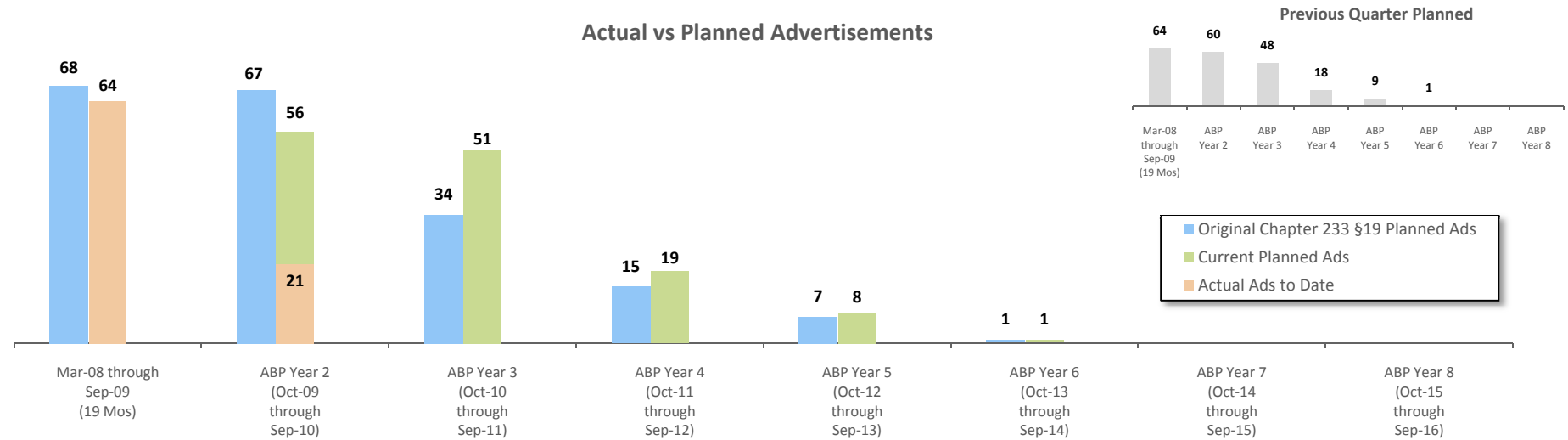
Projects "In Design" by Design Stage



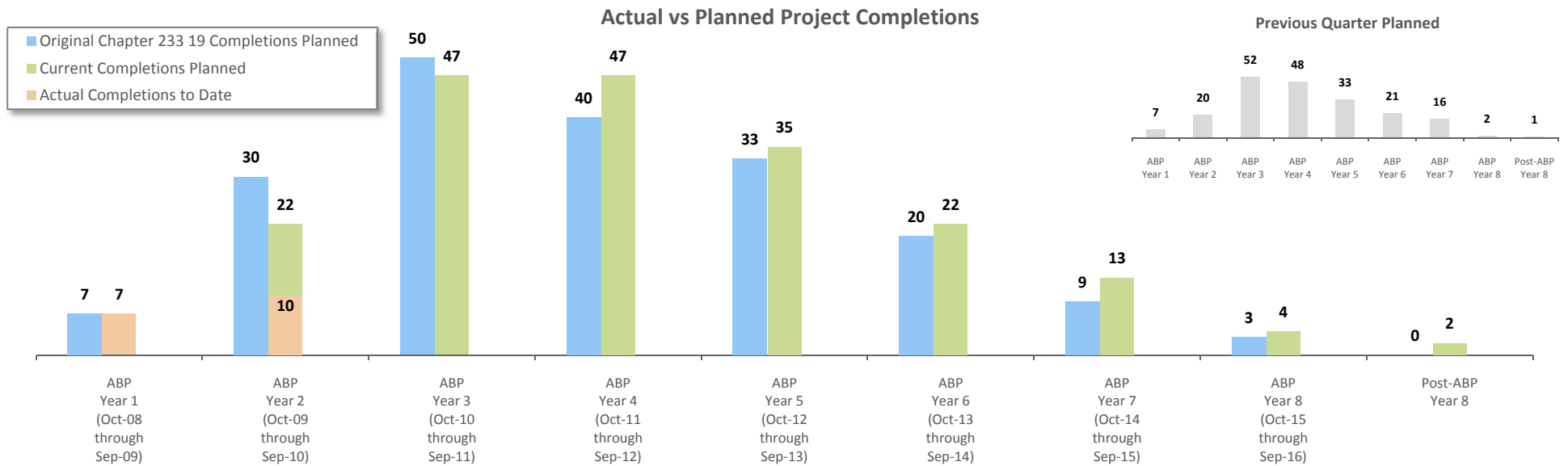
*The original count of projects included in the Program was 192. The list of projects is continuously evaluated based on updated bridge priority. Projects may be added, transferred to other Programs (such as ARRA), or swapped with more pressing bridge repairs/replacements.

Program Schedule Status

Actual vs Planned Advertisements



Actual vs Planned Project Completions



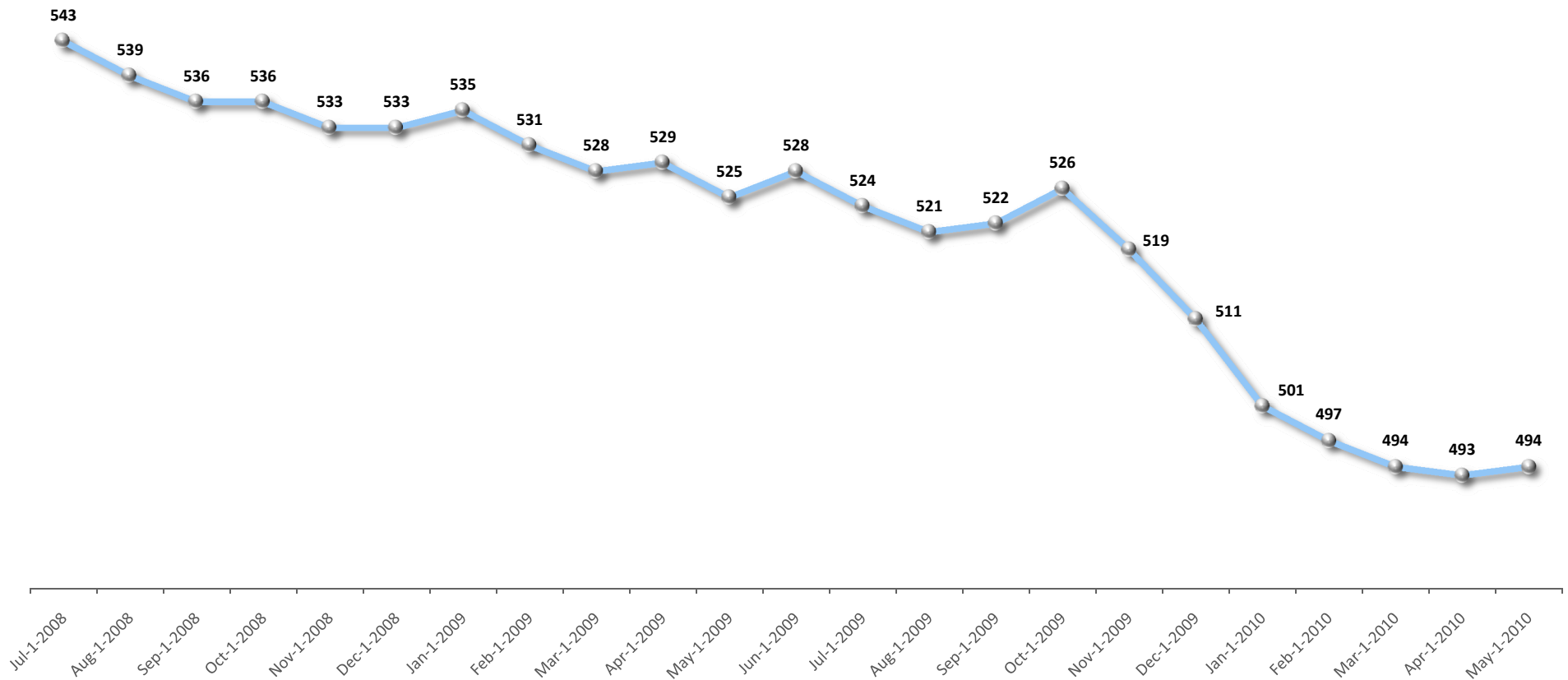
Data represented in this report is through May 3, 2010 unless otherwise indicated

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Bridge Condition Status

A structurally deficient bridge is one for which the deck (riding surface), the superstructure (supports immediately beneath the riding surface), or the substructure (foundation and supporting posts and piers) are rated in condition 4 or less on a scale of 1-10; a bridge that has experienced deterioration significant enough to potentially reduce its load-carrying capacity. Structural deficiency does not necessarily imply that a bridge is unsafe.

Structurally Deficient Bridges
(Former MHD & DCR)



Data represented in this report is through May 3, 2010 unless otherwise indicated

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Mega-Projects Status

Longfellow Bridge – Boston–Cambridge Rte 3/Cambridge Street over Charles River & Storrow/Memorial Drives Projects 604361 (Prime Rehabilitation) and 604421 (Early Action)

Prelim. Est.	604361 (Prime Contract) – \$255,573,258 604421 (Early Action Contract) – \$20,765,070
Status	604361 – 25% design stage 604421 – In Construction
Schedule	604361 – Current Scheduled Advertising Date is September 24, 2011 604421 – Notice-to-Proceed issued on May 12, 2010

Accomplishments/Expected within the next 3 months:

- Early Action Contract – Notice-to-Proceed issued on May 12, 2010
- Early Action Contract – Preconstruction Conference June 8th
- EA filed with FHWA on 4/10 and is under review
- Sketch Plan w/Revised 25% Review Comments returned to Designer
- Initiate Bridge Rehabilitation Advisory Task Force/Working Group
- Negotiate Phase 2 contract scope & fee and obtain FHWA authorization
- File the revised EA with FHWA and Public Comment

Fall River Bridge – Fall River - F-02-059 – State Route 79 Including all connecting Ramps, Bridge Rehabilitation Projects 605223 (Mega-Project) and 605795 (Emergency Repair)

Prelim. Est.	605223 - \$170,000,000 605795 - \$10,000,000
Status	605223 - Feasibility Study/Advisory Task Force Stage 605795 – In Procurement Process
Schedule	605223 - Current Scheduled Advertising Date is March 22, 2012 605795 – Bids opened May 4, 2010

Accomplishments/Expected within the next 3 months:

- Task Force Meetings began in February 2010, with approximately 25 regular participants
- Interim structural repair contract bids opened May 4, 2010
- Complete Regional Traffic Model for various alternatives
- Develop alternatives analysis in conjunction with Advisory Task Force
- File the Environmental Notification Form.

Mega-Projects Status

Fore River Bridge – Quincy/Weymouth, Q-01-001=W-32-001, State Route 3A (Washington Street) over the Fore River Project 604382

Prelim. Est. \$242,592,000

Status Pre-25% design stage

Schedule Current Scheduled Advertising date is **July 2, 2011**

Accomplishments/Expected within the next 3 months:

- Coast Guard Meeting held 3/2010
- Public Information Meeting held 4/2010 in Quincy
- File Environmental Assessment with FHWA
- Public Information Meeting on June 14, 2010 in Weymouth

Shrewsbury – State Route 9 (Belmont Street) over Lake Quinsigamond, Bridge Replacement, Project 604729

Prelim. Est. \$137,303,500

Status Pre-25% design stage

Schedule Current Scheduled Advertising date is **April 16, 2011**

Accomplishments/Expected within the next 3 months:

- Preliminary Structures Report/Preliminary Bridge Type submitted May 2010
- Geotechnical Exploration Borings
- Public Information Meeting held 3/2010
- Class of Action expected in May 2010
- Filing of Environmental Notification Form July 2010
- Public Information Meeting is anticipated in July 2010

Whittier Bridge – Amesbury/Newburyport - Route I-95 over Merrimack River & Evans Place, Bridge Replacement, Project 601096

Prelim. Est. \$285,000,000

Status Pre-25% design stage

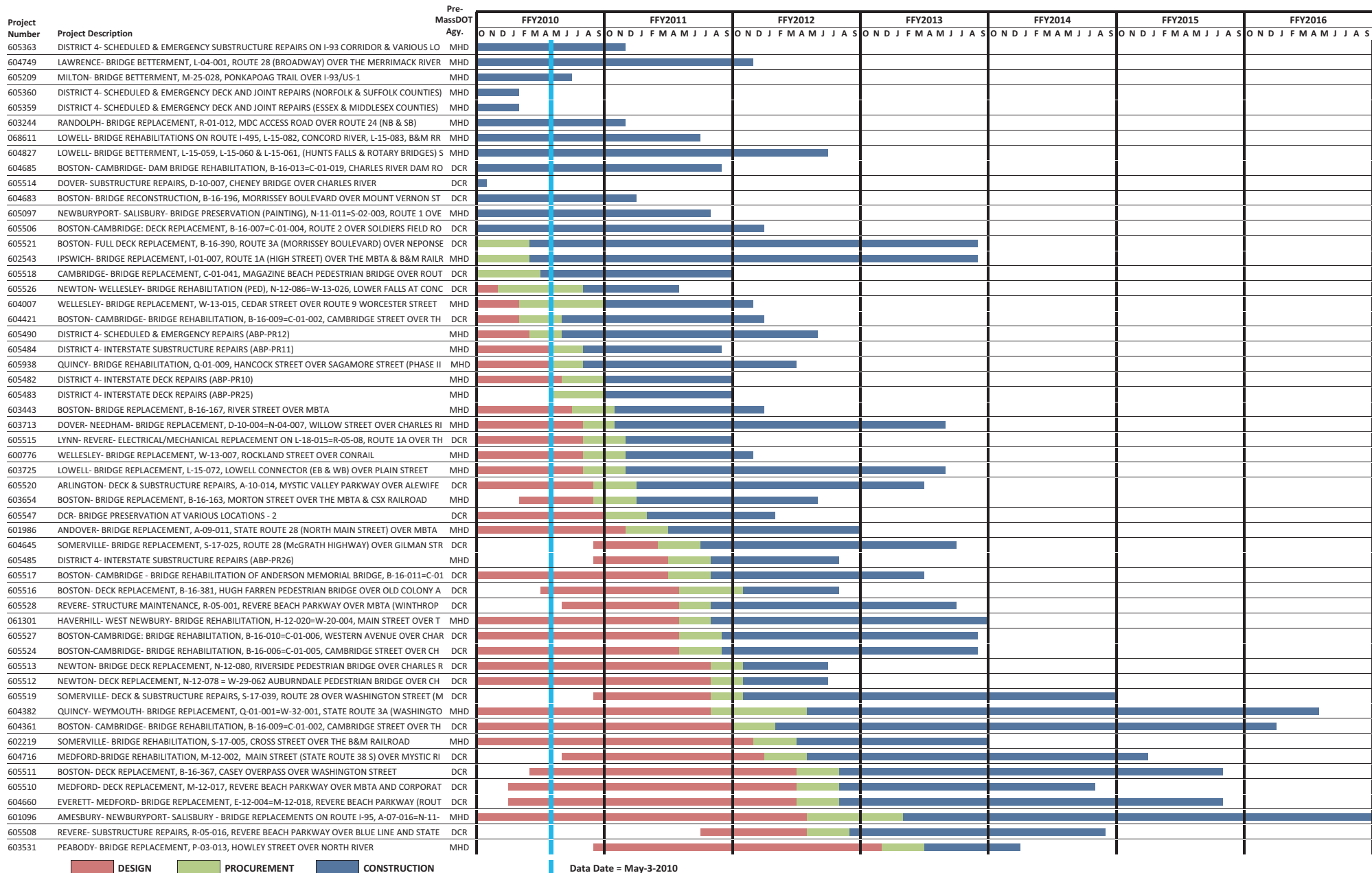
Schedule Current Scheduled Advertising date is **April 7, 2012**

Accomplishments/Expected within the next 3 months:

- Whittier Structural Rehabilitation Assessment Report
- Structural Assessment for Pine Hill, Evans Way, Rte 110, Rte 286
- Public Information Meeting held April 21, 2010 in Newburyport
- Continued advancement of type study matrix
- Submission/Review of DEIR/EA
- Geotechnical Boring Exploration in Merrimack River
- Bridge Type Alternatives, and Preliminary Whittier Type Study Report

Master Schedule

Thursday, May 20, 2010



DESIGN PROCUREMENT CONSTRUCTION

Data Date = May-3-2010

Glossary

Glossary of Acronyms

ABP	Accelerated Bridge Program	ENF	Environmental Notification Form
ACEC	American Council of Engineering Companies	FA	Federal-aid
ADT	Average Daily Traffic	FDR	Functional Design Report
ANRAD	Abbreviated Notice of Resource Area Delineation	FHWA	Federal Highway Administration
ARRA	American Recovery & Reinvestment Act of 2009	MassDOT	Massachusetts Department of Transportation
COA	Class of Action determination	MEPA	Massachusetts Environmental Policy Act
ConCom	Conservation Commission	MHD	Massachusetts Highway Department (predecessor to current MassDOT - Highway Division)
DCR	Department of Conservation and Recreation	NEPA	National Environmental Policy Act
D-B (or DB)	Design-Build	NFA	Non Federal-Aid
D-B-B (or DBB)	Design-Bid-Build	PS&E	Plans, Specifications, and Estimates
EA	Environmental Assessment	SD	Structurally Deficiency
EIR	Environmental Impact Report (MEPA)		
EIS	Environmental Impact Study (NEPA)		

Glossary of Terms

Word, Term, Title, Expression, or Phrase	Definition/Description
Abbreviated Notice of Resource Area Delineation	The Abbreviated Notice of Resource Area Delineation , WPA Form 4A, (ANRAD) serves two purposes under the Wetland Protection Act . First, the ANRAD provides a procedure for an applicant to confirm the delineation of a Bordering Vegetated Wetlands (BVW). If an ANRAD is filed for a BVW delineation, confirmation of other resource areas may also be requested provided the other resource area boundaries are identified on the plans which accompany the BVW boundary delineation. The second purpose of the ANRAD is to serve as the application for Simplified Review for projects in the Buffer Zone.
Average Daily Traffic	Average daily traffic or ADT is the standard measurement for vehicle traffic load on a section of road.
Bundle or Bundling	Bundling is a practice in which agencies consolidate two or more projects into a single prime contract.

Word, Term, Title, Expression, or Phrase	Definition/Description
Class of Action Determination	<p>A Class of Action determination is required for all Federal actions and establishes the level of environmental documentation required to comply with the NEPA and the regulations of the Council on Environmental Quality (CEQ). There are three classes of actions defined which prescribe the level of documentation required in the NEPA process:</p> <p>Class I: Environmental Impact Statements (EISs) - for actions that significantly affect the environment as defined by CEQ regulations.</p> <p>Class II: Categorical Exclusions (CEs) - for actions that do not individually or cumulatively have a significant environmental effect.</p> <p>Class III: Environmental Assessments (EAs) - for actions in which the significance of the environmental impact is not clearly established. All actions that are not Class I EISs or Class II CEs are Class III.</p>
Conservation Commission	Conservation Commissions , or Concoms , are local environmental agencies that typically administer the Massachusetts Wetland Protection Act and the Conservation Commission Act .
Design-Bid-Build	Design-Bid-Build is a project delivery method in which the agency or owner contracts with separate entities for the design and the construction of a project. Design-bid-build is the traditional method for project delivery.
Design-Build	Design-Build is a method of project delivery in which the agency or owner executes a single contract with one entity for design and construction services. This system is used to minimize the project risk for an owner and to reduce the delivery schedule by overlapping the design phase and construction phase of a project.
Federal Highway Administration	The Federal Highway Administration (FHWA) is a division of the U.S. Department of Transportation (DOT) that specializes in highway transportation.
Federal-Aid	Federal-aid describes highway funds that are authorized by Congress to assist the States in providing for construction, reconstruction, and improvement of highways and bridges on eligible Federal-aid highway routes and for other special purpose programs and projects.
Functional Design Report	A functional design report (FDR) is a necessary component for all transportation and safety improvement projects submitted to MassDOT at the 25% design stage, including mitigation projects developed through the Massachusetts Environmental Protection Agency (MEPA) process. Footprint bridge, roadway resurfacing, and maintenance projects are generally exempt from this requirement.
Functionally Obsolete	A bridge is functionally obsolete when it is inadequate to fulfill its current function, such as a four-lane road leading to a two-lane bridge.
Non Federal-Aid	Non Federal-Aid (NFA) is a Massachusetts term for funds for construction, reconstruction, and improvement projects on roads and bridges at the discretion of the state. The state share is 100 percent of the project costs.
Plans, Specifications, and Estimates	The engineering design process produces contract plans, specifications, and cost estimates (PS&E). These documents contain all the construction details, contract provisions, permits, agreements, and certifications required to advertise, award, and administer a construction contract.
Structurally Deficient	A structurally deficient bridge is one for which the deck (riding surface), the superstructure (supports immediately beneath the driving surface), or the substructure (foundation and supporting posts and piers) are rated in condition 4 or less on a scale of 1-10; a bridge that has experienced deterioration significant enough to potentially reduce its load-carrying capacity. Structural deficiency does not necessarily imply that a bridge is unsafe.